

consisting of silica, alumina, spinel, and combinations of two or more thereof; and said palladium, selectivity enhancer, and alkali metal or alkali metal-containing compound[, and selectivity enhancer] are each present in a sufficient amount to effect a selective hydrogenation of said highly unsaturated hydrocarbon.

Claim 52. (Twice Amended) A process comprising contacting a fluid with a composition

wherein

said fluid comprises an olefin and a highly unsaturated hydrocarbon;

said composition consists essentially of [comprises] (1) palladium, (2) silver, (3) an alkali metal or an alkali metal-containing compound, (4) a selectivity enhancer selected from the group consisting of lead, bismuth, thorium, gallium, tin, antimony, germanium, arsenic, cadmium, mercury, and combinations of two or more thereof, and (5) an inorganic support selected from

the group consisting of silica, alumina, spinel, and combinations of two or more thereof

wherein the metal of said spinel is selected from the group consisting of zinc, magnesium, calcium, beryllium, strontium, barium, radium, iron, manganese, zirconium, molybdenum, ruthenium, rhodium, cobalt, germanium, tin, and combinations of any two or more thereof;

the weight % of said palladium in said composition is in the range of from about 0.0001 to about 5%; and

the weight ratio of said selectivity enhancer to said palladium is in the range of from about 0.1:1 to about 20:1.

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Claim 58. (Twice Amended) A process comprising contacting an olefin-containing fluid stream which comprises a highly unsaturated hydrocarbon, in the presence of hydrogen, with a composition under a condition sufficient to effect selective hydrogenation of said highly unsaturated hydrocarbon to a less unsaturated hydrocarbon wherein said composition consists essentially of [comprises] (1) palladium, (2) silver, (3) an alkali metal or an alkali metal-containing compound, (4) a selectivity enhancer selected from the group consisting of lead, bismuth, and gallium, and (5) alumina; and

said palladium, silver, selectivity enhancer and alkali metal or alkali metal-containing compound[, and said selectivity enhancer] are each present in a sufficient amount to effect selective hydrogenation of said highly unsaturated hydrocarbon to a less saturated hydrocarbon.